IN THE CLAIMS:

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. When strikethrough cannot easily be perceived, or when five or fewer characters are deleted, [[double brackets]] are used to show the deletion. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1 and 3-11, and CANCEL claim 2 without prejudice or disclaimer in accordance with the following:

1. (currently amended) A copper-nickel-silicon quench substrate of a thermally conducting alloy for rapid solidification of molten alloy into strip, having a two-phase microstructure with cells of copper rich regions surrounded intimately by a discontinuous network of nickel silicide and chromium silicide phases,

wherein said thermally conducting alloy is a copper-nickel silicon alloy consisting essentially of about 6-8 wt % nickel, about 1-2 wt % silicon, about 0.3-0.8 wt % chromium, the balance being copper and incidental impurities.

2. (cancelled)

3. (currently amended) A quench substrate as recited in claim ~~2~~1, wherein said thermally conducting alloy is a copper-nickel silicon alloy consisting essentially of about 7 wt % nickel, about 1.6 wt[[.]] % silicon, about 0.4 wt % chromium, the balance being copper and incidental impurities.

4. (currently amended) A quench substrate as recited in claim 1, wherein ~~said cell~~the cells of the two-phase microstructure ~~has size~~have sizes ranging from 1 to 1000 μm.

5. (currently amended) A quench substrate as recited in claim 4, wherein ~~structure~~the cells of the two-phase microstructure ~~has size~~have sizes ranging from 1 to 250 μm.

6. (currently amended) A process for forming a quench casting wheel substrate comprising ~~the steps of~~:

~~a.~~ casting a copper-nickel-silicon two phase alloy billet having a composition consisting essentially of about 6-8 wt % nickel, about 1-2 wt % silicon, about 0.3-0.8 wt % chromium, the balance being copper and incidental impurities;

~~b.~~ mechanically working said billet to form a quench casting wheel substrate said mechanical working being carried out at a temperature ranging from about 760 to 955 °C[[.]]; and

~~c.~~ heat treating said substrate to obtain a two-phase microstructure having a cell size ranging from about 1-1000 μm, said heat treating being carried out at a temperature ranging from about 440 to 955 °C[[.;]], wherein the two-phase microstructure has cells of copper rich regions surrounded intimately by a discontinuous network of nickel silicide and chromium silicide phases.

7. (currently amended) A process as recited by claim 6, wherein said mechanical working ~~step~~ includes ~~the step of~~ extruding said billet to break down the residual silicide structure that forms during solidification of the cast ingot and to create sufficient strain to induce nucleation and grain growth uniformly through the entire part.

8. (currently amended) A process as recited by claim 6, wherein said mechanical working ~~step~~ includes ~~the step of~~ ring rolling said billet to break down the residual silicide structure that forms during solidification of the cast ingot and to create sufficient strain to induce nucleation and grain growth uniformly through the entire part.

9. (currently amended) A process as recited by claim 6, wherein said mechanical working ~~step~~ includes ~~the step of~~ saddle forging said billet to break down the residual silicide structure that forms during solidification of the cast ingot and to create sufficient strain to induce nucleation and grain growth uniformly through the entire part.

10. (currently amended) A process as recited in claim 6, wherein the mechanical working ~~steps~~ produces mechanical strain equivalent to a reduction in area ranging from at least about 7:1 to 30:1.

11. (currently amended) A process as recited in claim 6, wherein said heat treating is a two-stage process wherein ~~the~~ a first stage is a heat treatment for a time from about 1 to 8 hours at a temperature from about 955 to 995 °C[[.]], and ~~the~~ a second stage is a heat treatment to nucleate and grow the silicide phases for a time of about 1 to 5 hours at a temperature of about 440 to 495 °C.